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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,361	07/29/2003	Henry A. Hill	09712-331001 /Z-430	8937
26161	7590	12/08/2005	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			TURNER, SAMUEL A	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/630,361	HILL, HENRY A.	
	Examiner	Art Unit	
	Samuel A. Turner	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☒ Claim(s) 15-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/8/04, 10/21/04, 7/17/05.</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to because hand drawn lines in figure 1 and informal numbers and legions in figures 1-7. Figures 3, and 5-7 must be labeled as prior art. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 23-28, and 31 are incomplete in that these claims contain a limitation to "monitoring the position... using the method of claim 12". Claim 12 is only directed to "correcting measurement" and does not include any method for monitoring position.

Claims 29 and 30 are rejected as "use claims" as they merely recite a use without any active, positive steps delimiting how this use is actually practiced.

Art Unit: 2877

2173.05(q) "Use" Claims

Attempts to claim a process without setting forth any steps involved in the process generally raises an issue of indefiniteness under 35 U.S.C. 112, second paragraph. For example, a claim which read: "A process for using monoclonal antibodies of claim 4 to isolate and purify human fibroblast interferon." was held to be indefinite because it merely recites a use without any active, positive steps delimiting how this use is actually practiced. *Ex parte Erlich*, 3 USPQ2d 1011 (Bd. Pat. App. & Inter. 1986). Other decisions suggest that a more appropriate basis for this type of rejection is 35 U.S.C. 101. In *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967), the Board held the following claim to be an improper definition of a process: "The use of a high carbon austenitic iron alloy having a proportion of free carbon as a vehicle brake part subject to stress by sliding friction." In *Clinical Products Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966), the district court held the following claim was definite, but that it was not a proper process claim under 35 U.S.C. 101: "The use of a sustained release therapeutic agent in the body of ephedrine absorbed upon polystyrene sulfonic acid." Although a claim should be interpreted in light of the specification disclosure, it is generally considered improper to read limitations contained in the specification into the claims. See *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969) and *In re Winkhaus*, 527 F.2d 637, 188 USPQ 129 (CCPA 1975), which discuss the premise that one cannot rely on the specification to impart limitations to the claim that are not recited in the claim.

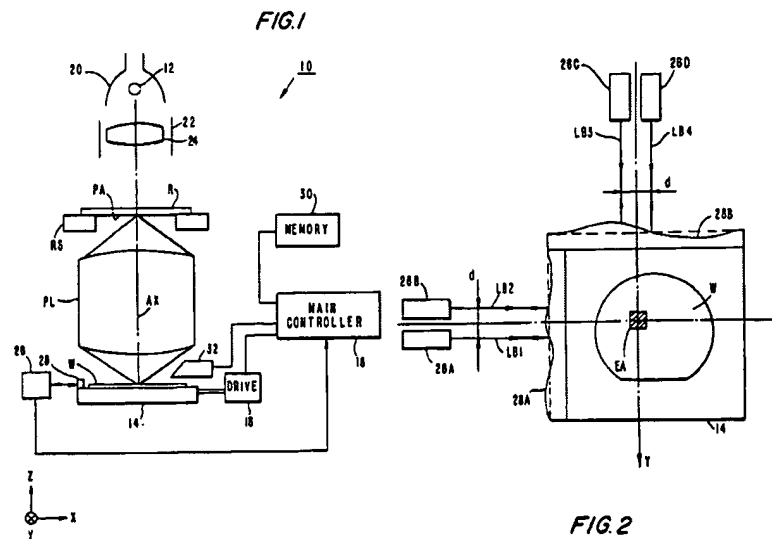
Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-22 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kamiya(5,790,253).



With regard to claim 15, Kamiya teaches a method comprising:

interferometrically monitoring locations X_1 and X_2 of a mirror surface relative to respective parallel axes while translating the mirror surface along a path substantially orthogonal to the parallel axes(column 8, lines 40-47); and

determining from the monitored mirror locations contributions from different spatial frequencies to surface imperfections of the mirror(column9, lines27-30).

With regard to claim 16, Kamiya teaches an apparatus comprising:

an interferometer(26A-26C) configured to produce an output beam comprising a phase related to an optical path difference between two beam paths, at least one of which contacts a mirror surface(28A,28B); and

an electronic controller(18) coupled to the interferometer, wherein during operation the electronic controller determines a position, x_1 , of the mirror with respect to a first measurement axis based on information derived from the output beam and an error correction term that accounts for surface variations of the

mirror for different spatial frequencies, wherein contributions to the error correction term from the different spatial frequencies are weighted differently.

As to claim 17, further comprising:

a second interferometer(26A-26C) configured to produce a second output beam comprising a phase related to an optical path difference between two beam paths, at least one of which contacts the mirror surface(28A,28B), wherein during operation the electronic controller(18) determines a position, x_2 , of the mirror with respect to a second measurement axis based on information derived from the output beam.

As to claim 18, wherein the first measurement axis(LB1 or LB3) is parallel to the second measurement axis(LB2 or LB4).

As to claim 19, wherein during operation the electronic controller(18) determines a position, x_3 , of a mark with respect to a third axis(X or Y) based on x_1 , x_2 , and the error correction term, wherein the third axis is parallel to and offset from the first and second measurement axes.

With regard to claim 20, Kamiya teaches a lithography system for use in fabricating integrated circuits on a wafer, the system comprising:

a stage(14) for supporting the wafer(W);

an illumination system(PL) for imaging spatially patterned radiation onto the wafer;

a positioning system(16) for adjusting the position of the stage relative to the imaged radiation; and

the apparatus of claim 16 for monitoring the position of the wafer relative to the imaged radiation.

With regard to claim 21, Kamiya teaches lithography system for use in fabricating integrated circuits on a wafer, the system comprising:

a stage(14) for supporting the wafer(W); and

an illumination system including a radiation source(12), a mask(R), a positioning system(16), a lens assembly(PL), and the apparatus of claim 16, wherein during operation the source directs radiation through the mask to produce spatially patterned radiation, the positioning system adjusts the position of the mask relative to the radiation from the source, the lens assembly images the spatially patterned radiation onto the wafer, and the apparatus monitors the position of the mask relative to the radiation from the source.

With regard to claim 22, Kamiya teaches a beam writing system for use in fabricating a lithography mask, the system comprising:

a source providing a write beam(12) to pattern a substrate(W);

a stage(14) supporting the substrate;

a beam directing assembly(PL) for delivering the write beam to the substrate;

a positioning system(16) for positioning the stage and beam directing assembly relative one another; and

the apparatus of claim 16 for monitoring the position of the stage relative to the beam directing assembly.

The remaining claim limitations found in claims 16-22 are functional limitations and these limitations can be met by the prior art if the structure of the prior art is capable of performing the claimed functions.

2114 [R-1] Apparatus and Article Claims — Functional Language

APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE
FROM THE PRIOR ART

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

Allowable Subject Matter

Claims 1-14 are allowed in view of the prior art of record.

With regard to claim 1, The prior art or record fails to teach "calculating a correction term, ψ_3 , from predetermined information characterizing surface variations of the mirror for different spatial frequencies, wherein contributions to the correction term from different spatial frequencies are weighted differently" in combination with the remaining limitations of claim 1.

With regard to claim 12, the prior art of record fails to teach "correcting measurements of a degree of freedom of a mirror relative to a first axis made using an interferometry system based on information that accounts for surface variations of the mirror for different spatial frequencies, wherein contributions to the correction from the different spatial frequencies are weighted differently".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Turner whose phone number is 571-272-2432.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached on 571-272-2800 ext. 77.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Samuel A. Turner', with a stylized flourish at the end.

Samuel A. Turner
Primary Examiner
Art Unit 2877